

Gene Pool



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Overview



Gene pool is a simulator app. It allows for users to learn about evolution, natural selection, and traits in an interactive way. In this app, you get to decide how many swimbots you have, what traits they carry and what traits attract them to

mates. You can add and kill swim bots manually or wait for nature to take its course. During the simulation, you may see some genes flourish while others do not make the cut.

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Content

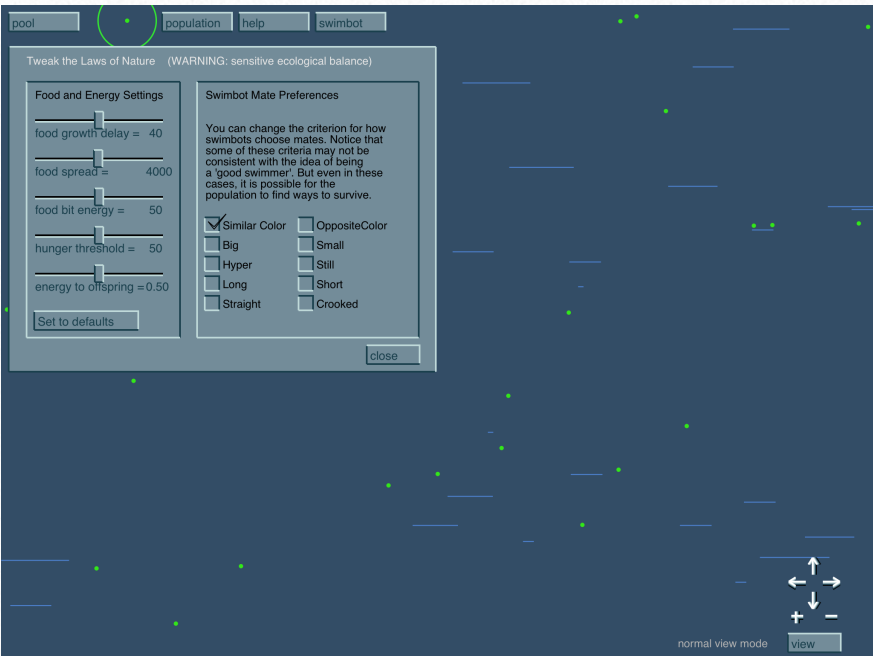
In this game the gene pool can be a product of your creation where you pick a specific type of swimbot or add them manually one by one. You can also choose to have a random pool chosen.



You can choose to have them be attracted to big, small, hyperactive, slow, and many other traits. This will determine who they try to mate with and will influence the gene pool over time. This is one way to demonstrate natural selection.

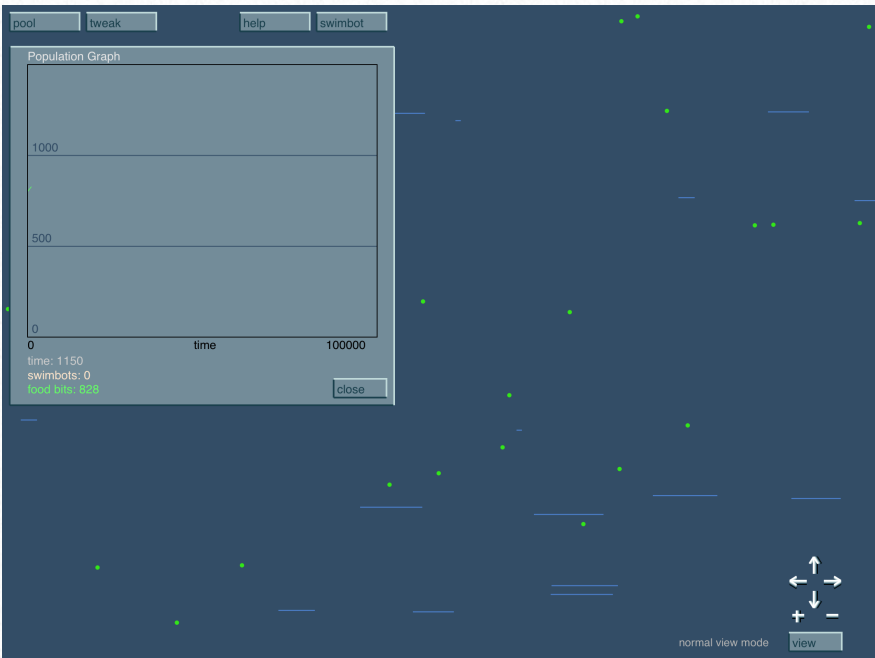
You can also change the environmental settings. You can change how

many food bits are available, how much energy the food bits provide, and how long it takes for new food to grow. The amount of energy required to create offspring is another adjustment that can be made. By changing any one of these settings, you can completely change a gene pool.

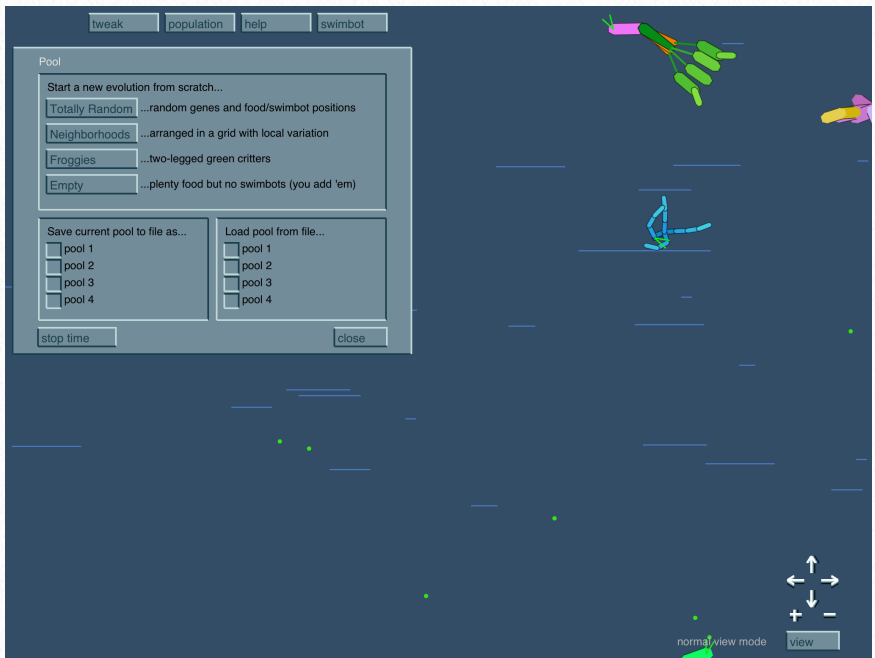


There may be times when every single swimbot dies. This is not a glitch it is just nature. This is how students can learn about extinction. All throughout the timeline of your gene pool, you can track population rates. You can see how they

rise and fall as you make biological and environmental adjustments.



If you like what you see and how a gene pool is progressing, you can save it to view it for later. After you save you can create a new gene pool, but still recall the other one at later times.



Each swimbot comes with a personal profile that tells you the amount of energy they have, how many offspring they have, what their current goal is,

their age, attractions and how many food bits they have eaten. In this profile, you can also choose to mutate, kill, clone and engineer the gene. If you like the current gene, you can save it to load in another gene pool.



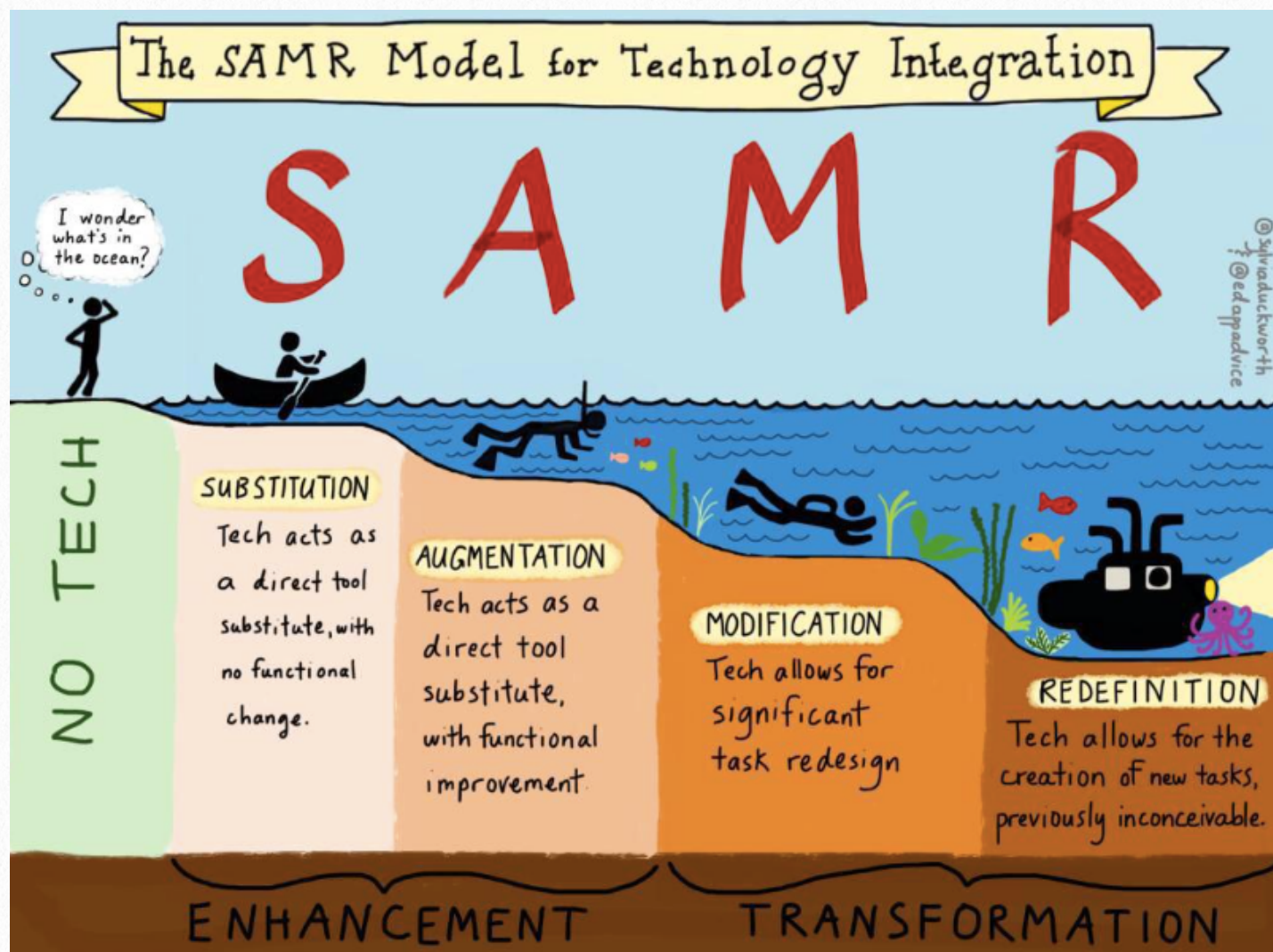
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SAMR and Rating

SAMR is a way to evaluate how technology is used in the classroom. Technology can either enhance teaching through substitution or augmentation. Or it can transform it through modification and redefinition.

The SAMR Model Explained





<http://www.stpatricks.tas.edu.au/school-life/elearning/21st-century-learning-copy/the-samar-model/>

Gene pool is a great app that has many different components to it. I would say that under the SAMR scale it would fall under modification. This app is interactive, and informational. There is room for some creation but there are restrictions. It is a great way to learn how different parts of evolution and ecosystems work. It is fun and will keep students engaged all while educating them.

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What Works and What Doesn't

This app is a lot of fun and it can be used as an effective educational tool. There is plenty of room for creativity while maintaining a structure, and it has the potential to help students visualize different aspects of ecosystems and evolution. On top of all this, it is completely free!

There are some drawbacks to this app. There is no way to formally save the population data. You can take a screenshot, but not actually save it to a file and send it to yourself or others. This can make it difficult to save and record data.

It can also be a little difficult to figure out at first, but there is a great help guide that can answer many of the questions you may have. There is also the possibility of students getting off task. This app is technically a game after all. There is always risk when using any technology that it may not be used as intended. However there is no way to access the internet or social media through this app. This will limit the temptation of the outside world.

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How to Use it in the Classroom

A worksheet can be created with step by step instructions. Students will follow this worksheet and write down their observations. When the exercise is done, they can reflect upon what occurred and how it explained evolution and natural selection.

Citations

Pictures:

All pictures of the actual Gene Pool app are screen shots

SAMR Model

<http://www.stpatricks.tas.edu.au/school-life/elearning/21st-century-learning-copy/the-samar-model/>

Video:

SAMR Model Explained - <https://www.youtube.com/watch?v=rLirt64X6Ns>